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ABSTRACT

The Learning Resources Service (LRS) at Southern Illinois State University at Carbondale is a department that has evolved from a film service to a broad-based instructional design center. It is involved in some aspects of faculty development, and the relationship between this involvement and traditional instructional design can be viewed in the framework of the Bergquist and Phillips model. The instructional development component of that model has been operationalized for use in the LRS. The logical next step may be a coordinated effort for organizational development in a variety of the university's programs, and a centralized faculty development center. (MSE)

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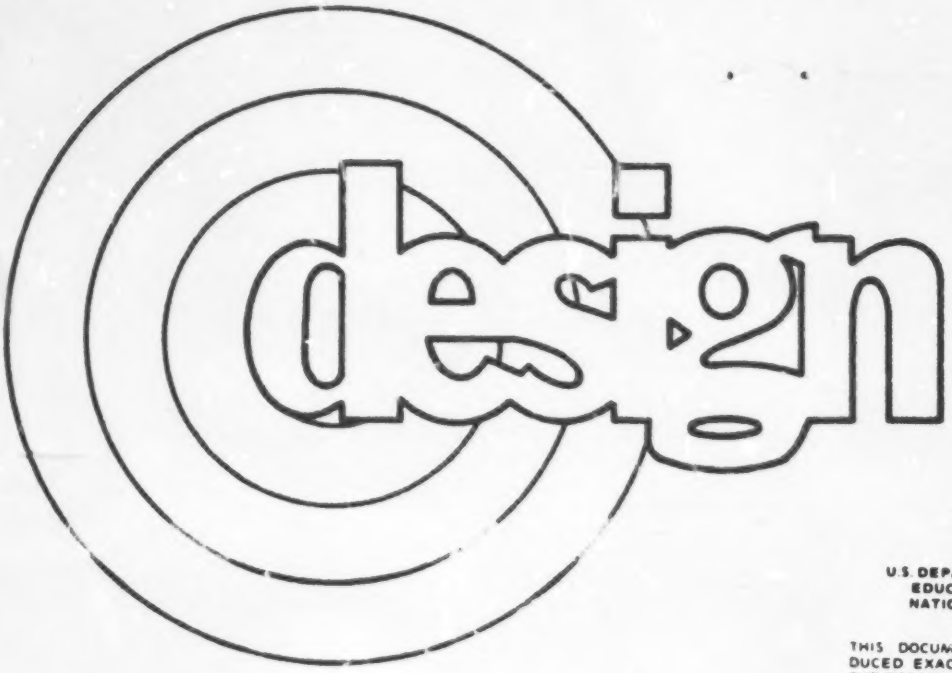

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INSTRUCTIONAL DEVELOPMENT IN HIGHER EDUCATION:

A case study of the Learning Resources Service, Southern Illinois University at Carbondale.

NE 010 267

SIU

Paper presented at the annual meeting of the Association for Educational Communications and Technology, Kansas City, 1978. David Akanbi, Douglas Bedient, Dale Brown, William Coscarelli, Marjorie Roth, Jerry Stonewater.

I

INTRODUCTION

When your children or grandchildren ask what you did during the great educational technology revolution of the seventies, will you be able to hold your head high and tell them, or will you shamefully say "I was a cart-pusher in Paducah?"

The term educational technology once meant hardware, but it now means much more. An early notion of educational technology encompassed a certain fascination with teaching machines, slide projectors, tape recorders, etc. As the field developed, concerns changed from equipment to a more systematic approach to instruction.

Educational technology means a systematic approach to a problem; an approach that encompasses all of the variables of instruction: the task, the teacher, the learner, the media, the instruction itself, the organization, and the hardware. The practitioner of this new technology has variously been named an instructional designer, psychologist, or developer. From Bruner's notion of a theory of instruction, to Glaser's seminal description of the instructional psychologist, this new technology is beginning to justify itself through demonstrated learning gains.

Yet even as the role of the instructional designer is beginning to be accepted in growing numbers of institutions of higher learning, this role is being expanded in an attempt to further increase the effectiveness of instruction as well as cope with the changing nature of higher education. This newer and more systematic approach is often referred to as faculty or professional development.

Faculty development represents a relatively new movement in education and is primarily concerned with the enhancement of the quality of instructional programs. It refers to programs designed to promote institutional growth and renewal as one means of improving the quality of instruction.

A selected review of the literature shows little agreement on the definition of faculty development. The meanings attached to the movement are as diversified as the variety of educators who have written on the subject. Crow (1977) describes faculty development as an umbrella term--an attitude, a belief, a commitment. Berquist and Phillips (1975) describe three components of faculty development: instructional development (process), organizational development (structure), and personal development (attitude). Mizell (1977) adds another component, professional development, to the three components listed in Berquist and Phillips' model. Davis, Abedor, and Witt (1976) list faculty development as one of the three components of educational development (others are instructional development and organizational development).

Over the course of the next few years it seems there will be considerable discussion about the relationship of instructional design and faculty development. Learning Resources Service (LRS) at Southern Illinois University at Carbondale (SIUC) is involved in some aspects of faculty development; this paper will address the relationship between this involvement and traditional instructional design. Hence, the focus and organization of this paper will be based on the faculty development model proposed by Berquist and Phillips. For a movement that is just developing, this model provides a comfortable framework from which to view the evolving role of instructional design in higher education.

II

The Faculty Development Model

The Berquist and Phillips model is based on the assumption that significant changes in the institution must take place at three levels: attitude, process, and structure:

> In the case of faculty development, primary attention is usually given to the process of instruction, most often to instructional methods and technology, curriculum development, and student evaluation of instruction.
>
> Frequently, when introduced to methods of college instruction, a faculty member will turn away or adopt a stance of passive resistance. Central to this resistance is the attitude of the faculty member toward teaching. If he does not value teaching, or does not perceive himself as being primarily a teacher, he will not spend time learning new techniques or exploring alternative instructional methods. At the same time, he may be fearful of displaying his shortcomings as a teacher or may be resisting the values and philosophies of education that underlie many new methods or curriculum proposals. An effective faculty development program, then, must deal with the attitudes of the faculty member, as well as with related values, philosophies, and self-perceptions.
>
> On the other hand. . . he may encounter restrictions and barriers resulting from institutional and/or departmental policies, norms, and procedures. He confronts, in other words, the structural constraints of the organization within which he operates. As is the case with personal attitudes, organizational structures can rapidly and thoroughly blunt the thrust of a faculty development program that neglects the structural dimension (p. 183).

These assumptions regarding structure, process, and attitude are represented in Figure 1. From this model we can now explore the development and function of the Learning Resources Service in an evolving discipline.

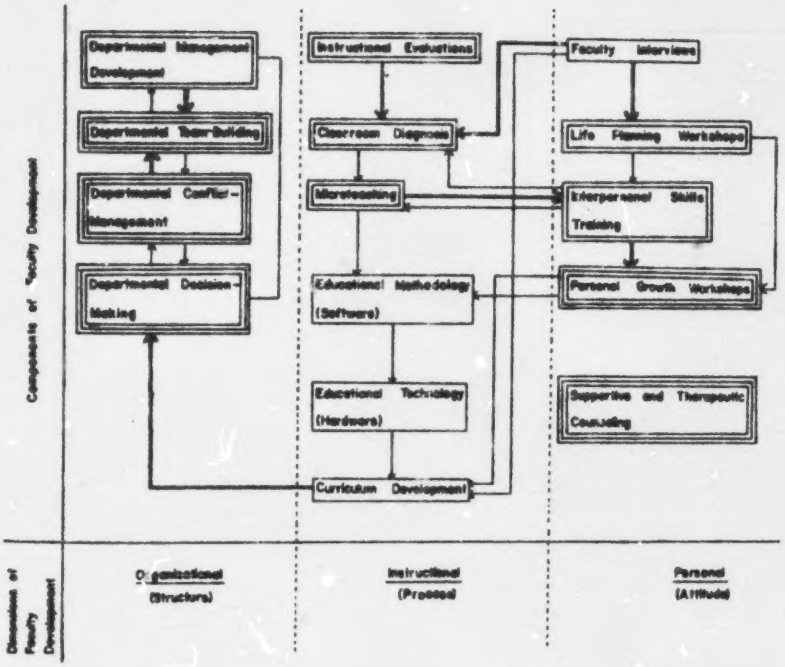

Figure 1

Berquist & Phillips Model of Faculty Development[1]

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[1]Lines between two components of the model indicate that activities in one of these components lead frequently and "naturally" to activities in the other component. The arrow indicates the usual direction of this movement between program areas. The components tending to be least threatening and which, therefore, tend to provoke least resistance, are represented by boxes with single-lined edges. Those programmatic components that tend to be most threatening and are resisted by the greatest number of faculty are represented by boxes with three-lined edges. Two-lined boxes represent components of intermediate threat and resistance. Similarly, in those instances in which movement from one component to another is usually accomplished with very little resistance, thin lines are drawn between the two boxes. (For) high threat and resistance . . . thick lines are drawn between the components.

III

Instructional Design in Faculty Development

It is perhaps easiest to begin with the role of instructional design (or development--but ID in either case), as this role is the most familiar.

Learning Resources Service is a department which has evolved from a film service to a broad-based instructional design center. The organization was founded shortly after World War II as a film service for the extension service of Southern Illinois University. In 1948 the film service's name became Audio-Visual Aids Service and the unit began to supply equipment and operators as well as motion pictures to the university and surrounding schools.

In the mid-1950's the AV Service became part of Library Affairs which is still the administrative home of LRS. The service became connected with the library so that print and non-print media were consolidated. In the early 1960's the Service began to provide graphics and photography support for instructional purposes. An independent study lab was also proposed about this time. The central administration envisioned a larger role for the department, the name was changed to Learning Resources Service, and the first ID activities began.

Since the middle 1960's there has been a continued evolution in the instructional design program. Currently there are six designers on the faculty at LRS. The LRS is funded with hard dollars through the state and other income is produced through its off-campus film rentals.

The role of the instructional designer in the application of this faculty development model is central to the organization of LRS. Most of the instructional services offered are provided through consultation with a particular designer. Each designer is assigned to a particular school or

schools within the university and thus allowed to develop a familiarity with the unique problems of people within those schools.

The remainder of this paper is a description of how the Learning Resources Service at SIUC has operationalized the instructional development component of the Berquist and Phillips model.

A. Instructional Evaluation

Four types of instructional evaluation utilized in the instructional design program are discussed.

1. Evaluation by Questionnaire

Two forms of standardized instruments are used to evaluate instruction: the Instructional Improvement Questionnaire (IIQ) and Instructor-Course Evaluation (ICE). Similar to forms used at many other institutions, the questions are standardized, feedback is given in terms of means on items, and decile ranks of the faculty member compared to others in the department or college are indicated.

Another form of questionnaire evaluation is the instructor-designer made form. This type of "in-house" questionnaire is used when data are needed on a particular segment of instruction, when the IIQ is inappropriate for the instructional strategy being used, or when very detailed and specific information is needed in order to "fine-tune" a procedure.

The IIQ or ICE are superior to the instructor-designer made form when data comparing faculty to one another are useful, when a general overview of the quality of instruction is desirable, or when certain items included in these instruments are pertinent to the instructional design project being undertaken. On the other hand, the questionnaire designed for a particular purpose is

advantageous when specific behaviors are to be analyzed or when very detailed data are desired on an instructional intervention.

2. Evaluation by a Human Facilitator

Four types of evaluation approaches used at SIUC that involve human facilitators are student evaluation teams, designer-led class discussion, designer observation and critique, and administrative review. Since the latter case usually does not involve the designer, it will not be discussed here.

Student evaluation teams consist of a group of five to eight students, the designer, and sometimes the instructor. The team typically meets once a week to discuss the course or the instructor's teaching style. The designer's role is to facilitate the discussion by acting as a catalyst focusing students on issues that provide specific information for improving instruction. At times the sessions can be highly structured--in the case where the feedback is needed on a particular instructional intervention--and at other times the sessions are unstructured to allow students to indicate what is most important to them. The instructor's involvement in the weekly meetings is usually a decision left to the group and depends upon how open they can be in the instructor's presence. If it is felt that more honest and open communication can occur without the instructor present and if the instructor concurs, the designer relays information from the meetings to the instructor.

The second technique in the human facilitator category is a variation of the student evaluation team: the designer-led class discussion approach where the designer spends about one-half hour with a class obtaining feedback. Students are asked at the beginning of the session to list what they think the course/

instructor's strengths and weaknesses are. After this is complete the designer leads a discussion with the class to obtain student input. This discussion is based on a list of questions that have been discussed with the instructor. Again, questions can be as specific or general as desired, depending upon the type of information the instructor and designer want to obtain. After the session with the class the designer discusses the feedback with the instructor (who is generally not present in class). Student written comments are typed so that the responses remain anonymous. If time permits, the designer can group the student written comments into similar categories and provide frequency information to the instructor, thereby providing easy-to-use summary statements for the instructor.

The designer observation and critique of class is yet another source of data concerning instructional effectiveness. As in the other approaches, the observation can focus on particular behaviors of the instructor or be more general in scope. After the observation, the designer provides feedback to the client.

The human facilitator approaches involving student input seem to be the most effective in motivating the instructor to make changes based on the information gathered. The use of the designer observation and critique tends to be more useful for providing the designer with information about where the instructional problems lie rather than motivating the instructor to change. However, with any of the approaches, those that are carefully designed beforehand in terms of specific information that is needed, appear to provide the most usable data.

3. Evaluation by Use of Technology

Evaluating instructional effectiveness by technological means usually involves videotape analysis of instruction. The videotape itself provides the instructor with real world data of actual behavior. The important element in videotaping, however, is the playback session, where the skill of the designer in assisting the client to identify and improve upon inappropriate behavior is critical. Playback sessions can take one of two forms: the designer critiques and points out behaviors that are inappropriate or the designer probes and questions to assist the client in discovering inadequate behaviors. Obviously, additional personnel beyond the designer and client can be used in the playback session. Peers can be invited to participate or other designers can be involved to point out aspects of teaching behaviors they feel are important. With any of these approaches the focus can be on problems only, on strengths only, or on both.

The advantage of videotape is that it provides the actual situation to be analyzed. Success depends to a large extent upon the quality of the relationship between the designer and the client. It seems that clients who feel comfortable with the designer are more likely to exhibit changes in behavior than clients who feel uncomfortable.

4. Evaluation Based on Students' Improvements in Learning

Evaluating one's instruction on the basis of how much student learning occurred can help pinpoint instructional deficiencies. After assessing pre- to posttest gains following instruction, data are available to analyze what areas were or were not well taught/

learned. After weak areas are identified, the instructional environment surrounding the teaching of that content area can be dissected and new approaches can be discussed.

In using evaluation techniques, one basic principle should be stressed: no one technique provides all of the information necessary on which to make instructional decisions. This implies that numerous approaches should be used.

B. Classroom Diagnosis

Prior to receiving assistance with a diagnosis of an instructional need, the client somehow needs to make contact with Learning Resources Service. This is typically accomplished through client-initiated contacts, designer-initiated contacts, or administrator referrals.

1. Diagnostic Tools and Techniques

Once the client has made contact with Learning Resources Service, the process of diagnosing the instructional need may begin. This is accomplished at SIUC through a variety of techniques, among them the following:

a. Client/Designer Verbal Interactions

One of the most frequently used diagnostic tools is that of the face-to-face conversation between client and designer. Within this framework, the designer can explore and assess the client's felt instructional needs, motivation for seeking assistance with those needs, philosophy regarding the educational process as a whole, teaching and/or interpersonal operating style, perception of the client's and the designer's role in the design effort, and the existing constraints under which the client and designer must operate. All of these are factors which influence the diagnosis of an instructional need.

b. Client-Supplied Data

Frequently, the client will supply the designer with information relating to the instructional need. Course syllabi, classroom tests, instructional materials (both print and non-print), student grades, or student evaluations of the client's instruction are commonly used. These types of data give the instructional designer additional material to aid in making of diagnostic decisions.

c. Observation

At the designer's suggestion or the client's request, the designer will either observe the client or arrange to have the client videotaped in a typical teaching situation. Observations allow the designer to diagnose the client's perceived needs or to identify different ones which the client may not have expressed.

d. Inter-Designer Consultations

A major advantage of having six instructional designers at LRS is the opportunity for designers to share and critique diagnoses of instructional needs. This process provides the designer with alternative viewpoints to the orginial diagnosis, as well as some practical methods for presenting the resulting diagnosis to the client.

e. Incorporation of Relevant Literature

In reading the research literature or attending professional conferences and conventions a designer may encounter a particularly useful method of diagnosis or an instructional need which is similar to that of a client. Use of this information can aid the designer in making the diagnosis of an instructional need.

f. Documentation

If the client had previous contact with LRS, the details of these meetings will be recorded in the client's log, which is an on-going summary of designer-client activities. Similarly, a summary of the client's activities within a particular semester are documented in an end-of-term report.

By examining the logs and end-of-term reports the designer can gain insight into some of the client's previous activities, as well as the client's operating style. These factors greatly assist the designer in carrying out the diagnostic process with the client.

g. Incidental Information

Informally collected information, such as the designer's perceptions of the client's non-verbal behavior, informal discussion with students, or contradictions in the client's verbal statements provide a measure of insight into what some of the client's actual, and perhaps unconscious, instructional needs may be.

2. Data Feedback

Upon completing the diagnosis of the client's instructional needs and after gathering the evaluation data needed, the designer must decide how best to present the results. In the case of client-supplied data or observational data, a simple sharing of the results of the analysis may provide a useful approach. If the designer's diagnosis indicates that the client's perceived needs seem to differ substantially from the actual needs, then the designer is faced with the problem of presenting this discrepancy to the client. In some cases it may be most beneficial to point out the discrepancy and suggest that efforts be redirected towards satisfying the actual need. Depending upon the client's operating style, constraints, and motivation for seeking assistance, the designer may indicate

that a better solution would be found by first addressing the client's perceived need. After the client-designer relationship has become more secure, development efforts can be directed to the actual instructional need.

C. Microteaching

While the Berquist and Phillips model calls for the specific phase of microteaching, it seems to fit more appropriately in the technology and methodology section of their model. Some view microteaching as an opportunity for an instructor to rehearse specific classroom skills before entering the class. Their emphasis on microteaching seems to indicate that Berquist and Phillips have not adopted a more holistic approach to problem solving in instructional design; concentrating on the classroom presentations rather than on the systematic design process that attempts to control for all variables in the instructional process. Because this is just one part of a comprehensive design approach, microteaching will not be discussed here, but rather viewed as one of many of the designer's tools.

D. Educational Methodology and Technology

Once the evaluation and diagnostic stage is completed and the instructor decides there is room for teaching improvement, the instructional designer and client can begin in earnest to solve the client's instructional problems.

Each instructional designer coordinates the instructional design activities and where appropriate, the various services offered through Learning Resources Service. Thus, the six instructional designers are consultants on instructional improvement as well as the contact for a wide variety of instructional technology services.

While there is no specific departmental design model, a systematic approach to instructional design is used. This process has been developed, refined, clarified, simplified, and expanded by different people at different times. Generally speaking, this process consists of four steps:

1. specification of goals and objectives;
2. identification of the characteristics of the learner;
3. selection of appropriate instructional strategies; and
4. evaluation in relation to goals and objectives.

Based on the information gathered and interpreted in the Classroom Diagnosis phase of the Berquist & Phillips model, a designer might begin by having the client state the goals or objectives of the project.

Objectives in education are often confusing due to terminology. We often hear about general objectives, instructional objectives, educational objectives, learning objectives, and behavioral objectives. Clarification often appears to be an individual exercise and can be aided by imagining a continuum from the general to the specific: broad

goal statements appear at the general pole and behavioral objectives are at the other end. As the designer and client specify goals or objectives, procedures, communications, and evaluations necessary to complete the project are discussed. Providing goals or instructional objectives gives students something tangible to consider; disagreement with these objectives can then take the form of constructive alternatives. In this way instructional objectives seem essential for they provide navigation to an otherwise random or uncharted course.

The second task in systematic planning is the identification of learner characteristics. The designer and client assess the capacities of the students. Many times a client will assume that all students are ready to share in the class--such is the assumption of the prerequisite course. But this assumption is not always valid. The student who passes the prerequisite course with an "A" is probably different from the one who received a "C", yet many tend to treat both students the same. Time spent assessing the needs and characteristics of the learner is well worth the effort.

The third stage, defining instructional strategies, is where many faculty expect to enter a design process. To begin to address instructional strategies without considering objectives and student characteristics is a fairly typical faculty member's expectation.

The major task here is to educate faculty that there are different types of learning that require different instructional strategies. Some faculty have unconsciously adjusted their presentation strategies for various types of learning; many have not. The designer tries to help them consciously identify types of learning and apply the instructional strategy most appropriate to the learning task.

Evaluation of the instructional strategies and other parts of the plan is a fourth consideration. Clients are exposed to the idea that evaluation is a continuous process, should be on-going, and is an indicator of the success or failure of the instructional design process. As Davis, Alexander, & Yelon note in Learning Systems Design:

> However, for every option available to you, you must choose among given alternative and come to some decision. Each decision and each choice you make should be to further the learning of your students. And for each decision you may ask: Did I choose correctly? How well did I succeed? What should I do next time? You need answers to these kinds of questions in order to properly evaluate a learning system and unless you obtain these answers, you cannot improve your instruction (1974, p.80).

E. Curriculum Development

Curriculum development is not addressed frequently enough from the vantage point of instructional design. Sometimes curricula are developed without sufficiently specific goals, a situation somewhat analogous to the unplanned lecture, but with more long-reaching consequences.

Instructional designers are involved in curriculum development to the extent that they work with faculty on course development. Indeed designers interact with faculty on topics of a curricular nature, attempt to ascertain the proper sequence of information in a course, specify the entry and exit level expectations for student performance, and determine how a course fits into the total curricular offerings of a department. However, this involvement and interaction on topics of a comprehensive curricular nature have been for the most part outside the realm of the instructional designer at SIUC.

For those few times that instructional designers have been involved with departmental curriculum development, the role of the

designer serves to stimulate and guide departmental discussion, to offer evaluation methodology for determining the impact of the current curriculum, and to offer systematic curriculum planning processes for consideration. Yet this type of activity has been quite limited as departments of a university rely upon their own expertise to consider such topics.

But as Berquist & Phillips observed, movement from instructional design to curriculum development implies a move to a new realm--organizational development. This movement may very well represent the current scene at SIUC. During the fall semester the Office of the Vice President for Academic Affairs and Research formed an ad hoc committee of the Undergraduate Teaching and Curriculum Committee to study components of instructional, organizational and personal development at SIUC.

To determine the nature and extent of the development activities the committee met during the fall semester with representatives from a variety of university programs. Discussions were held with Evaluation Services, Computing Services, the Counseling Center, Teaching Skills Laboratory, Learning Resources Service, Research Development and Administration, and Personnel Services.

The committee recommended that a Faculty Development Center should be established to support the continuing personal and professional development of the faculty at SIUC in the performance of their teaching, research, service, and administrative duties.

In recommending that on-campus expertise be utilized in the Faculty Development Center, the Committee may have recognized the extent of the

decentralized developmental activities currently found on the campus, The report appears to recommend centralizing these various developmental activities into one total unit.

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APPENDIX

LRS Support Services

An integral component of Learning Resources Service at SIUC is its coordinated network of support services. This network enables LRS clients to receive a wide variety of instructional resources and services at no cost to the class instructor, and frees the instructional designers to function primarily as course development consultants. Support services at LRS encompass five general areas: Graphics Production, Equipment Distribution and Maintenance the SIUC Film and Media Library, the Self Instruction Center and Student Media Design Laboratory, and Clerical Support. A brief overview of each area follows.

Graphics Production

Professors requiring graphics support materials for their instruction need bring only two things to LRS: themselves and their ideas. From this point, professor and designer meet to establish objectives for the finished graphic and to subsequently determine its final form. Dependent upon the latter outcome, the proposed graphic idea is submitted to the graphics section, whose three graphic artists, three photographers, and one clerical worker perform the necessary illustrating, thermofax and diazo production, PMT enlarging and reducing, lettering, ortho and color slide production, slide duplication, on-location photography, black and white photographic printing, and primary typing services, free of charge to faculty for use in instruction. An estimated 240 clients per year utilize the LRS graphics service. Approximately one hour of the professor's time spent planning for graphics materials translates into ten hours of produced instructional materials.

Equipment Distribution and Maintenance

The overriding principle of the LRS Equipment Distribution and Maintenance

section is choice--choice of media hardware, choice of interaction with the hardware, and choice of how the media hardware will be utilized. A team of distribution managers, equipment maintenance and repair personnel, and student equipment operators are available to loan, operate, and maintain an extensive inventory of 8- and 16-mm film projectors, videotape equipment, slide projectors, overhead and opaque projectors, reel-to-reel and cassette tape recorders, and microphones. All service to instructors and students is free of charge for instructional use. Instructors may request the use of equipment for a time period of one day to an entire semester, while students are allowed to borrow equipment for up to two weeks. Student operators may be requested by instructors to deliver and operate equipment for any class (including night courses) and at any location on campus. If instructors choose to operate the equipment themselves, the equipment staff is available to train them through formal and informal training sessions. All LRS equipment is repaired at LRS, as is any campus A-V equipment similar in make to that possessed by LRS--again, free of charge. In addition to presenting already-produced instructional programs, the Equipment Section has also been instrumental in videotaping microteaching sessions and originating locally-produced videotaped instructional programs.

The Film Library

Duality of service is a prominent characteristic of the SIUC Film Library, resulting in two types of benefits for the SIUC faculty. First, the film library provides over 5000 available film titles to faculty in 26 major subject areas. Films may be accessed by subject or title through the SIUC film catalog, an annotated guide which provides useful bibliographic, content, and grade level information for each film. The film library is a self-supporting unit, receiving its funding through fees collected from other institutions of higher education and a variety of

other community, educational, and industrial organizations located throughout the country. Additionally, the Film Library provides two free films a year to each SIUC student teacher to use in their teaching. Second, the booking division of the Film Library assists instructors in obtaining off-campus rental films, with LRS paying the first $10.00 of the rental fee and the instructor's department paying the remainder of the fee. Films are routinely obtained for preview for instructors and they may also request the purchase of new films for the Library.

Self Instruction Center and Student Media Design Laboratory

Although the majority of LRS services are designed to indirectly benefit students through assistance provided to their faculty instructors, the Self Instruction Center (SIC) and Student Media Design Laboratory (SMDL) are two support units established to provide direct instructional support to students. SIC functions as a repository for self-paced print and non-print instructional modules, which are both commercially and locally produced. Any instructional material of this nature may be placed in SIC under a designated course number by an instructor, with the instructor and the instructional designers receiving weekly usage reports on all housed materials. Unique features of SIC include a dial access audiotape system, connected to twenty-four of the Center's self-study carrels, and four PLATO computer-assisted instruction terminals, heavily utilized over a wide variety of academic subject areas.

The Student Media Design Laboratory (SMDL) affords students the opportunity to learn about and produce various types of media products, including transparencies, slides, audiotapes, laminations, drymounts, paper duplications, typed materials, lettered materials, opaque enlargements, posters, and bulletin boards. Peer assistance is heavily utilized in both SIC and SMDL, which depend heavily upon a well-qualified staff of student

workers, who maintain the Center and instruct students in use of the equipment and media production techniques.

Clerical Support

Typing, bookkeeping, and filing are only a small portion of the duties assumed by the LRS Clerical Support staff, whose duties also include the booking of films, cataloging of self-instructional materials, inventorying of the equipment collection, and maintenance of the LRS library. The clerical staff includes both professional and student workers.